

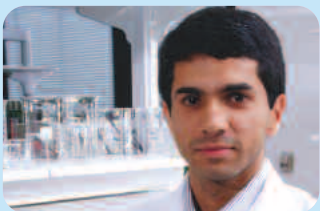


Now you don't have to
choose between speed,
resolution, and sensitivity.

Rapid Resolution High Throughput (RRHT)
and Rapid Resolution (RR) HPLC Column Portfolio



Agilent Technologies



"I need to run twice as many samples in half the time with half the resources."

Whether you specialize in pharmaceuticals, chemical analysis, foods, flavors, biotech, or environmental testing, chances are good that you're under increased pressure to generate conclusive data about sample identification, quantitation, purity, metabolic stability, and other key sample attributes. And to get it done under tight time constraints.

But the good news is ... Agilent has expanded its line of ZORBAX Rapid Resolution High Throughput (RRHT) LC columns to offer you more choices than ever before. So you can achieve rapid, reproducible results without compromising quality.



"I worry that the methods I develop today may have to be revalidated tomorrow when I transfer them to the QC lab."

Introducing...

Agilent's Advanced High Pressure ZORBAX RRHT 1.8 μ m LC Columns:

helping you overcome your most daunting separation challenges.

New ZORBAX RRHT 1.8 μ m LC columns — and the Agilent 1200 Series Rapid Resolution LC System — offer a powerful combination that delivers:

- **Significant time savings — and improved resolution.** With ZORBAX RRHT LC columns, you can run samples up to 20 times faster, with 60% greater resolution.
- **Flexible chromatography options.** Choose from over 70 column configurations including:
 - Lengths from 15mm — 150mm
 - IDs from 1.0mm — 4.6mm
 - 6 different ZORBAX bonded phases
- **Easy, reliable method transfer.**

With their 1.8 μ m particle size, RRHT LC columns can reduce your analysis time by up to 95% without compromising your resolution. So you can meet the tightest time constraints.

What's more, if you have already developed conventional LC methods on Agilent's ZORBAX LC columns, you can easily and securely transfer these methods to Agilent's ZORBAX RRHT LC columns. And you can do it without compromising resolution. That's because column efficiency increases dramatically as the particle size decreases to 1.8 μ m. So you can analyze more complex separations on shorter columns — and re-evaluate current methods on fast LC without changing separation conditions.

Finally, Agilent RRHT columns allow you to push flow rates to the limit without compromising the efficiency or quality of your separations. And if you perform LC/MS, you can count on our high-pressure ZORBAX RRHT LC columns to deliver more accurate identification with less coelution. So you can achieve better separations of high-sensitivity compounds.



"I can't afford to lose time troubleshooting and repeating my experiments."



"Complex samples used to be an occasional challenge. Now, they're a routine complication."



No matter what your separation needs may be, Agilent's ZORBAX RRHT and RR LC columns can enhance your lab's productivity without sacrificing performance, reliability, or convenience.

Whether you need to analyze complex protein digests – or perform an ultra-fast separation in under 1 minute – Agilent's diverse selection of ZORBAX Rapid Resolution High Throughput and Rapid Resolution LC columns deliver the right results on time. In your lab ... or any lab throughout the world.

Meet deadlines while increasing productivity.

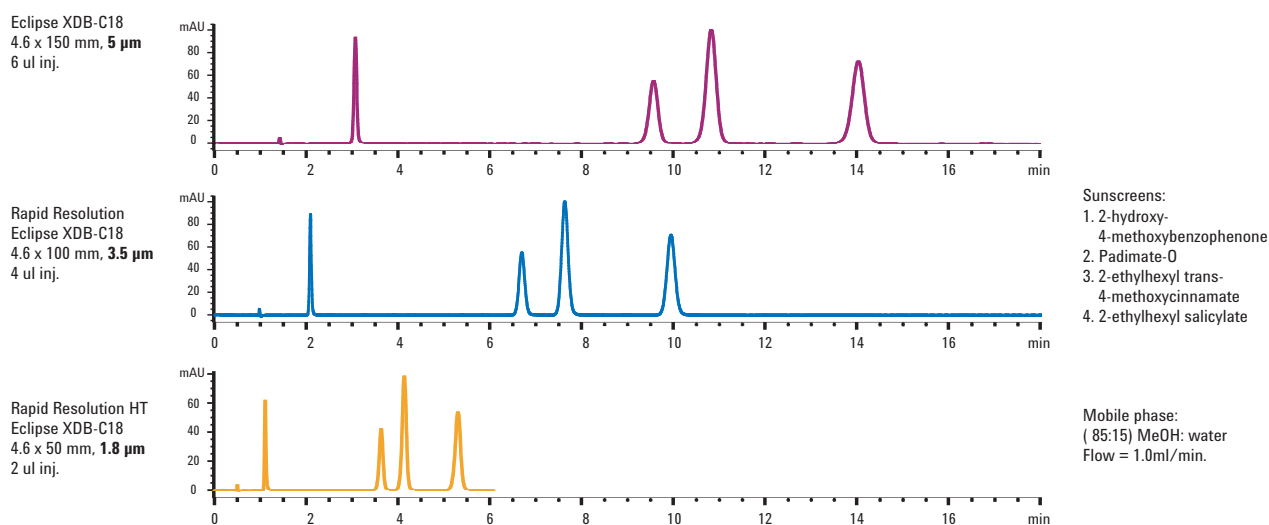
From supporting fast separations under higher pressures ... to ensuring consistent performance under lower pressures ... Agilent ZORBAX HPLC columns deliver reliable results on both Agilent and non-Agilent systems. With Agilent ZORBAX HPLC columns, you can ...

- Process samples up to 10-20 times faster than conventional HPLC, while achieving equal or superior resolution, sensitivity, and reproducibility.
- Complete more runs per day.
- Perform conventional, fast, and ultra-fast separations within the same column family. So you can transfer methods easily and reliably without re-validation.

ZORBAX RRHT LC columns are specifically designed for high-speed and high-throughput applications. They are an extension of our ZORBAX family of LC columns engineered for the highest performance over the widest range of applications.

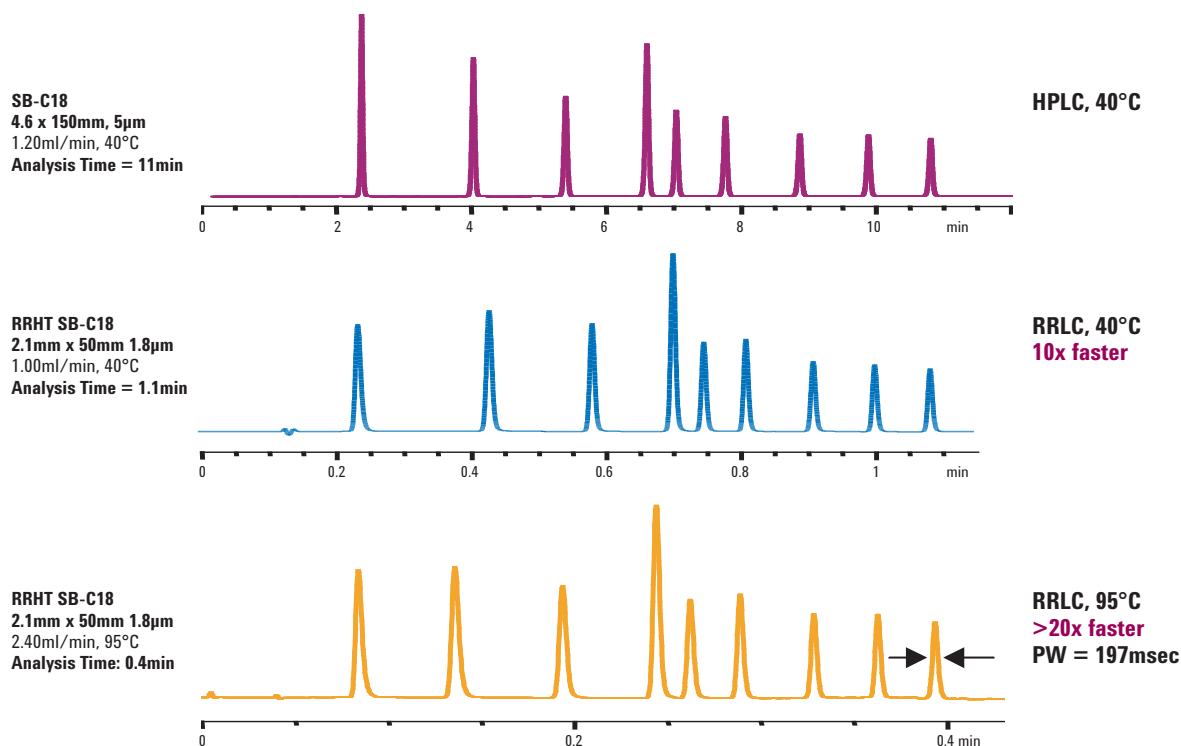
Perform conventional, fast and ultra-fast separations within the same column family

Compare 5, 3.5 and 1.8 μ m Columns



Rapid Resolution HT columns and the Agilent 1200 Rapid Resolution System

10X – 20X faster than conventional HPLC with Traditional 5µm columns



**ZORBAX RRHT 1.8µm LC columns can improve resolution
by 30-80% vs. conventional LC**

Chromatographic Parameter	Particle Size		
	5 µm	3.5 µm	1.8 µm
Resolution – Acetylsalicylic acid/ Phenacetin	4.7	6.0	8.5
Improvement from 5µm	-	28%	81%
Resolution – Phenacetin/Salicylic acid	1.61	2.07	2.25
Improvement from 5µm	-	29%	40%
Efficiency (plates) – Acetylsalicylic acid	1980	3170	6474
Efficiency (plates) – Salicylic acid	1917	3430	6049
Peak Capacity ($k_{max} = 10, R_s = 1, n = 1 + (\sqrt{N}/4) \ln(1 + k_{max})$)	27	35	48

chromatograms not shown



The broadest LC column selection for maximum separation flexibility.

With over 100 LC column configurations to choose from, the ZORBAX RRHT and RR LC column portfolio can help you achieve optimal results under varying temperatures, pressures, and pH ranges.

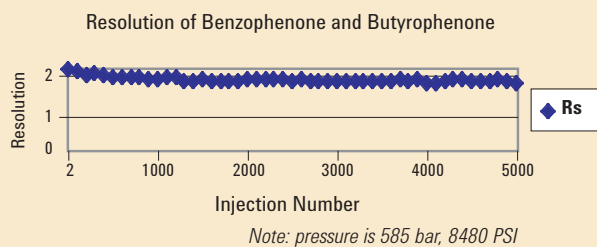
See pages 8-10 for our full line of RRHT and RR LC columns featuring:

- **Shorter (15mm -50mm) columns** for performing high-speed analysis.
- **Longer (100mm -150mm / 1.8µm) columns** for greater resolution.
- **Both narrow and standard bores** with IDs ranging from 1mm to 4.6mm
- **Multiple bonded phases**

Long life and robust performance

Typically, you might expect a column's lifetime to shorten significantly as you decrease its particle size. However, Agilent's ZORBAX RRHT LC columns have been shown to last through thousands of injections. Our careful attention to design makes it possible to increase column life while decreasing the likelihood of the column frit becoming plugged with sample, resulting in 5,000+ injections.

Achieve long column lifetime with Agilent ZORBAX RRHT LC columns



High investment protection and value

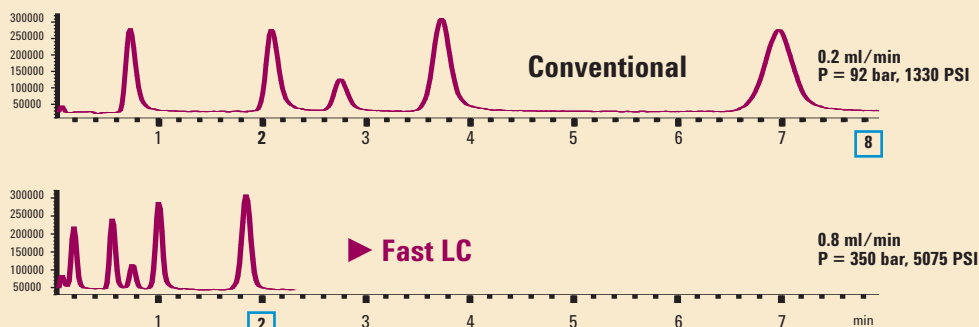
Both ZORBAX RRHT and RR LC columns allow you to perform conventional and/or ultra-fast separations on your new Agilent 1200 Series Rapid Resolution LC System – or with only minor modifications to your existing Agilent 1100 System. So you can maximize your resources – and minimize the need for additional training. (See page 9 to order your RRHT-1100 upgrade kit.) ZORBAX 1.8µm particles operate at 25% lower pressure than competitive LC columns, making it possible to effectively use sub-2-micron (1.8µm) technology on your existing instrumentation – without upgrading your entire system.

Agilent ZORBAX RRHT LC column with Agilent 1200 Series Rapid Resolution LC System: better performance at dramatically lower pressures

	Competitor A	Agilent RRHT LC column
Column	2.1mm x 50mm, 1.7µm	2.1mm x 50mm, 1.8µm
Resolution	3.50	3.69
Pressure	700 bar, 10150 PSI	440 bar, 6380 PSI – that's 60% lower!

ZORBAX RRHT LC columns can be used for conventional *and* fast LC and LC/MS

Temp : 35C (90:10) 0.1%FA: MeOH w 0.1% FORMIC ACID, Detection: MS, TIE



Count on Agilent instruments, columns, and supplies for high-quality results, improved productivity, and a reduced cost of doing business.

To learn more, visit us at: www.agilent.com/chem/fastLC



Run samples up to 20x faster than conventional LC with the complete Agilent 1200 Series Rapid Resolution LC System.

Agilent's NEW 1200 Series Rapid Resolution LC System can help you produce your numbers more efficiently than ever before. So you can meet your most difficult deadlines. Features include ...

- 60% more resolving power than traditional LC
- a peak capacity greater than 600
- 30-second cycle time
- efficiencies above 60,000 plates
- the ability to run your current methods
- flexible, comprehensive services to ensure peak performance
- 24x7 technical support by phone or Web

Together with Agilent's NEW ZORBAX RRHT 1.8 μ m LC columns, the Agilent 1200 Series Rapid Resolution LC System can help you achieve fast, rugged and precise HPLC ... ultra-fast separations ... and results you can trust.

To learn more visit: www.agilent.com/chem/1200RR





You asked for *choice* in column dimension, ID, and bonded phase.

**We offer an unsurpassed variety of columns
to accommodate virtually any application.**

Choose from the following configurations optimized for performance, reliability, ruggedness, and long life:

ZORBAX RRHT 1.8µm LC columns for high-pressure use (maximum pressure: 600 bar, 9000 PSI)

Best for fast and high-resolution LC.

	SB-C18	SB-C8	Eclipse XDB-C18	Eclipse XDB-C8	Extend-C18	SB-CN
4.6 x 150 mm	829975-902					
4.6 x 100 mm	828975-902	828975-906	928975-902		728975-902	
4.6 x 50 mm	827975-902	827975-906	927975-902	927975-906	727975-902	827975-905
4.6 x 30 mm	824975-902	824975-906	924975-902	924975-906	724975-902	824975-905
4.6 x 20 mm	826975-902	826975-906	926975-902	926975-906	726975-902	
3.0 x 150 mm	829975-302					
3.0 x 100 mm	828975-302	828975-306	928975-302		728975-302	
3.0 x 50 mm	827975-302	827975-306	927975-302	927975-306	727975-302	827975-305
3.0 x 30 mm	824975-302	824975-306	924975-302	924975-306	724975-302	824975-305
3.0 x 20 mm	826975-302	826975-306	926975-302	926975-306	726975-302	
2.1 x 150 mm	820700-902	820700-906				820700-905
2.1 x 100 mm	828700-902	828700-906	928700-902	928700-906	728700-902	828700-905
2.1 x 50 mm	827700-902	827700-906	927700-902	927700-906	727700-902	827700-905
2.1 x 30 mm	824700-902	824700-906	924700-902	924700-906	724700-902	824700-905
2.1 x 20 mm	826700-902	826700-906	926700-902	926700-906	726700-902	
1.0 x 100 mm	828600-902	828600-906	928600-902	928600-906	728600-902	828600-905
1.0 x 50 mm	822600-902	822600-906	922600-902	922600-906	722600-902	822600-905

Date of introduction: □ February 01, 2006 □ March–April 2006 □ May 01, 2006

ZORBAX RRHT 1.8µm columns and cartridges (maximum pressure: 400 bar, 6000 PSI)

Best for fast LC.

	Eclipse XDB-C18	Eclipse XDB-C18 3pk	Eclipse XDB-C8	SB-C18	SB-C18 3pk	SB-C8	Extend-C18
Standard Columns							
4.6 x 50 mm	922975-902	922975-932	922975-906	822975-902	822975-932	822975-906	722975-902
2.1 x 50 mm	922700-902	922700-932		822700-902	822700-932		
Cartridge Columns (require hardware kit 820555-901)							
4.6 x 50 mm	925975-902	925975-932		825975-902	825975-932		
4.6 x 30 mm	923975-902	923975-932		823975-902	823975-932		
4.6 x 15 mm	921975-902	921975-932		821975-902	821975-932		
2.1 x 50 mm	925700-902	925700-932		825700-902	825700-932		
2.1 x 30 mm	923700-902	923700-932		823700-902	823700-932		
2.1 x 15 mm	921700-902	921700-932		821700-902	821700-932		

Agilent 1100 Series Conversion Kits for Fast LC

Make your system RRHT compatible in less than 1 hour!

These kits make it easy to convert your Agilent 1100 system with a binary pump to a lower-volume system for RRHT LC columns. Each kit contains all capillaries, a flow cell, starter columns, and detailed instructions for system conversion. (Note: you will still be able to use your converted 1100 for standard methods and columns.)

Choose your kit by selecting the type of detector and column internal diameter desired.

Kit Part Number	Kit Selection	Kit Contents
5188-5323	For Variable Wavelength Detectors (VWD)	Columns: 4.6 x 50 mm, 1.8 μ m (3) Flow Cell for VWD, 5 μ L Capillaries, u-LC inline filter
5188-5324	For Diode Array Detectors (DAD & DAD SL) and Multiple Wavelength Detectors (MWD)	Columns: 4.6 x 50 mm, 1.8 μ m (3) Flow Cell for DAD, 5 μ L Capillaries, u-LC inline filter
5188-5328	For Diode Array Detector and Mass Spec	Columns: 2.1 x 50 mm, 1.8 μ m (2) Flow Cell for DAD, 1.7 μ L Capillaries, ZDV union

ZORBAX Rapid Resolution (3.5 μ m) HPLC columns

ZORBAX Eclipse XDB HPLC columns

	Eclipse XDB-C18	Eclipse XDB-C8	Eclipse XDB-CN	Eclipse XDB-Phenyl
4.6 x 150 mm	963967-902	963967-906	963967-905	963967-912
4.6 x 100 mm	961967-902	961967-906	961967-905	*
4.6 x 75 mm	966967-902	966967-906	966967-905	966967-912
4.6 x 50 mm	935967-902	935967-906	*	935967-912
4.6 x 30 mm	934967-902	934967-906	*	*
4.6 x 20 mm	932967-902	932967-906	*	*
3.0 x 150 mm	963954-302	963954-306	963954-305	963954-312
3.0 x 100 mm	961967-302	961967-306	*	961967-312
2.1 x 150 mm	930990-902	930990-906	*	*
2.1 x 100 mm	961753-902	961753-906	961753-905	*
2.1 x 50 mm	971700-902	971700-906	*	*
2.1 x 30 mm	974700-902	974700-906	*	*
2.1 x 20 mm	972700-902	972700-906	*	*
1.0 x 150 mm	963600-902	963600-906	*	*
1.0 x 50 mm	965600-902	965600-906	*	*
1.0 x 30mm	961600-902	961600-906	*	*
Guard Cartridges				
4.6 x 12.5 mm, 4pk	820950-925	820950-926	820950-935	820950-927
2.1 x 12.5 mm, 4pk	821125-926	821125-926	821125-935	821125-926
Guard Hardware Kit for 4.6 & 2.1 mm				
1.0 x 17 mm, 3pk	5185-5921	5185-5921	*	*

Date of introduction: April 01, 2006

* Custom column available. Contact your local Agilent representative or Agilent Authorized Distributor

ZORBAX StableBond HPLC columns

	SB-C18	SB-C8	SB-CN	SB-Pheny	SB-AQ	SB-C3
4.6 x 250 mm	884950-567	*	*	*	*	*
4.6 x 150 mm	863953-902	863953-906	863953-905	863953-912	863953-914	*
4.6 x 100 mm	861953-902	861953-906	861953-905	861953-912	861953-914	*
4.6 x 75 mm	866953-902	866953-906	866953-905	866953-912	866953-914	*
4.6 x 50 mm	835975-902	835975-906	835975-905	835975-912	835975-914	*
4.6 x 30 mm	834975-902	834975-906	*	*	*	*
4.6 x 20 mm	832975-902	832975-906	*	*	*	*
3.0 x 150 mm	863954-302	863954-306	863954-305	863954-312	863954-314	*
3.0 x 100 mm	861954-302	861954-306	861954-305	861954-312	861954-314	861954-309
2.1 x 150 mm	830990-902	830990-906	*	*	830990-914	*
2.1 x 100 mm	861753-902	861753-906	861753-905	861753-912	861753-914	*
2.1 x 75 mm	866735-902		*	*	*	*
2.1 x 50 mm	871700-902	871700-906	*	*	*	*
2.1 x 30 mm	874700-902	874700-906	*	*	871700-914	*
2.1 x 20 mm	872700-902	872700-906	*	*	*	*
1.0 x 150 mm	863600-902	863600-906	*	*	*	*
1.0 x 50 mm	865600-902	865600-906	*	*	*	*
1.0 x 30mm	861600-902	861600-906	*	*	*	*
Guard Cartridges						
4.6 x 12.5 mm, 4pk	820950-902	820950-902	820950-916	820950-917	820950-933	820950-922
2.1 x 12.5 mm, 4pk	821125-926	821125-926	821125-924	821125-926	821125-933	821125-924
Guard Hardware Kit For 4.6 & 2.1 mm						
1.0 x 17 mm, 3pk	5185-5920	5185-5920	*	*	*	*

Date of introduction:  April 01, 2006

* Custom column available. Contact your local Agilent representative or Agilent Authorized Distributor

ZORBAX Eclipse XDB and StableBond Rapid Resolution cartridge columns (require hardware kit 820555-901)

	Eclipse XDB-C18	Eclipse XDB-C8	SB-C18	SB-C8
4.6 x 30 mm	933975-902	933975-906	833975-902	833975-906
4.6 x 30 mm, 3pk	933975-932	933975-936	833975-932	833975-936
4.6 x 15 mm	931975-902	931975-906	831975-902	831975-906
4.6 x 15 mm, 3pk	931975-932	931975-936	831975-932	831975-936
2.1 x 30 mm	973700-902	973700-906	873700-902	873700-906
2.1 x 30 mm, 3pk	973700-932	973700-936	873700-932	873700-936
2.1 x 15 mm	975700-902	975700-906	875700-902	875700-906
2.1 x 15 mm, 3pk	975700-932	975700-936	875700-932	875700-936

Additional ZORBAX Rapid Resolution HPLC columns

	Extend-C18	Bonus-RP	Rx-C18	Rx-C8
4.6 x 150 mm	763953-902	863668-901	863967-902	863953-906
4.6 x 100 mm	764953-902	861953-914	861967-902	833975-936
4.6 x 75 mm	766953-902	866668-901	866967-902	831975-906
4.6 x 50 mm	735953-902	*	*	*
3.0 x 150 mm	*	*	863967-302	863954-306
3.0 x 100 mm	764953-302	864668-301	861967-302	861954-306
2.1 x 100 mm	761753-902	861753-914	861767-902	861753-906
2.1 x 50 mm	735700-902	861700-901	*	*
1.0 x 150 mm	763600-902	863608-901	*	*
1.0 x 50 mm	765600-902	865608-901	*	*
1.0 x 30 mm	761600-902	861608-901	*	*

* Custom column available. Contact your local Agilent representative or Agilent Authorized Distributor

Which bonded phase should you choose for your application?

ZORBAX Eclipse XDB

is your first choice for method development, over the wide pH range 2-9, and for most applications up to 60°C.



ZORBAX StableBond

is best for low-pH and high-temperature applications as follows:

SB-C18: up to 90°C / down to pH <1

SB-C8: up to 80°C / down to pH 1

SB-CN: up to 80°C / at pH 2



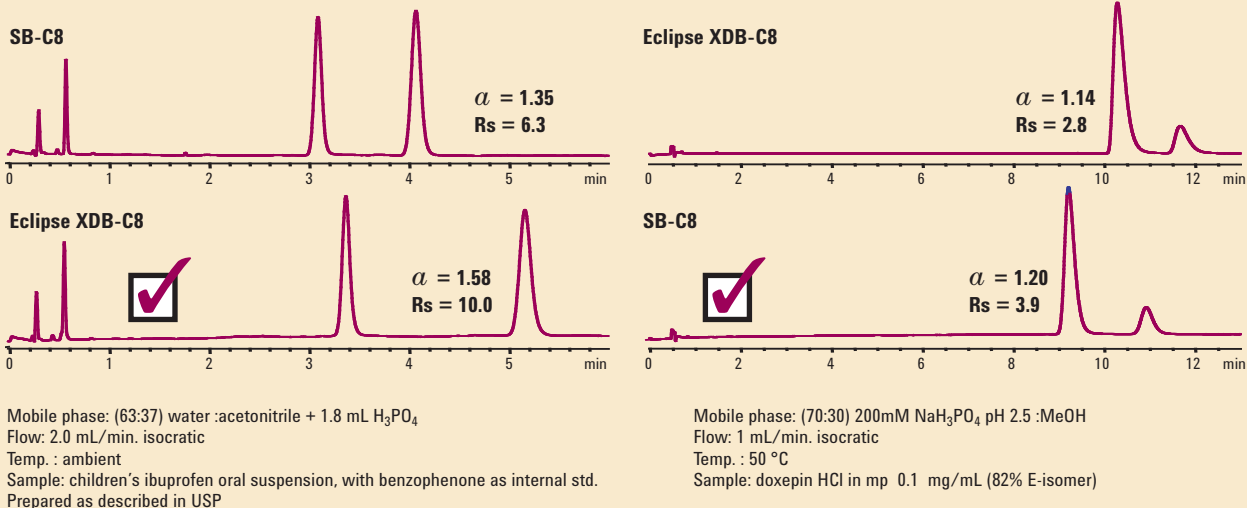
ZORBAX Extend-C18

can be used in high-pH applications – up to pH 11.5 at ambient temperatures.



Multiple bonded phases provide the selectivity choices you need

Columns: ZORBAX RRHT, 4.6 x 50 mm, 1.8 µm



To learn more about Agilent ZORBAX RRHT LC columns, or other Agilent products and services, visit us online at: www.agilent.com/chem/fastLC.



Agilent is your single source for fast, accurate HPLC.

For more information about Agilent's ZORBAX Rapid Resolution High Throughput and Rapid Resolution HPLC column portfolio, visit us online at **www.agilent.com/chem/fastLC**

Call toll free: **1 800 227 9770**, option 1 (in the US and Canada)

Or contact your **local Agilent representative**
or Agilent Authorized Distributor.

For technical assistance in selecting the column that provides reliable, reproducible results on time, every time, call **1 800 227 9770**, option 4 (in the US and Canada).

For information about the Agilent 1200 Series Rapid Resolution LC System, visit us online at **www.agilent.com/chem/1200RR**

Don't forget to visit Agilent's Online Store at **www.agilent.com/chem/store** for easy ordering and up-to-the-minute information.

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**You can also check Agilent's
2005-2006 Essential
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(Publication 5989-1212,
available in six languages)



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